Wisconsin
Department of Commerce

Evaluation # 200256-I

Safety & Buildings Division
201 West Washington Avenue
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Wisconsin
Building Products Evaluation

Material	ENRGY 3 Roof Insulation
Manufacturer	Johns Manville P.O. Box 5108 Denver, CO 80217-5108

SCOPE OF EVALUATION

GENERAL: This report evaluates the ENRGY 3 roof deck insulation, manufactured by Johns Manville.

This review includes the cited **International Building Code (IBC)** requirements below in accordance with the current **Wisconsin Amended IBC Code:**

- **Foam Plastic:** The ENRGY 3 roof deck insulation was evaluated as a foam plastic building material in accordance with **s. IBC 2603.1**, **2603.2**, **2603.3**, **Exception 3.**, **2603.4.1.5**, **2603.5.2** and **2603.6**.
- **Roof Insulation:** The ENRGY 3 was evaluated as a roof deck insulation in accordance with **s. IBC 1505** and **s. 1508**.

DESCRIPTION AND USE

The ENRGY 3 roof deck product consists of a rigid polyisocyanurate insulation board faced on both sides with a glass reinforced organic facer in 4 x 4 x 8 foot sheets.

TESTS AND RESULTS

The ENRGY 3 roof deck insulation meets the approval requirements of the Standards listed below for Class 1 roof insulation when used in selected roof deck constructions.
Standards:

Class 1 Roof Covers	***FM 4470**
Class 1 Insulated Steel Deck Roofs	***FM 4450**
Class A Roof Cover	**UL 1256**

*Test results indicate that ENRGY 3 roof deck insulation meets the Factory Mutual Research Standard (FM) 4450 and 4470 approval requirements for Class 1 Fire and various Windstorm Classifications with the following exceptions:

1. All assemblies which utilize modified bitumen roof covers with more than 2 plies require the use of minimum ½-inch thick Retro-Fit or minimum ¾-inch thick Fesco Board roof insulation mopped or mechanically fastened over the ENRGY 3 roof deck insulation.
2. Fastened/mop assemblies that utilize wood fiber cover boards are not included.
3. Re-roof construction on steel deck is not included.
4. FR EPDM roof covers will be limited to the slope Approved with ENRGY 3 roof deck insulation or 1:12, whichever is less.
5. Johns Manville PVC roof covers will be limited to the following ASTM E108 ratings:
   - Class A noncombustible deck ratings at a maximum slope of 2.5 per 12.
   - Class B noncombustible deck ratings at a maximum slope of 3 per 12.

Tests show that the tested roof constructions in and of themselves would not create a need for automatic sprinklers.

Factory Mutual also conducted tests in accordance with ASTM E108 with the following results:

Sample No. 1-4:
-1/2 inch (13 mm) plywood
-Mechanically fastened 2-inch (51 mm) thick ENRGY 3 roof insulation
-Johns Manville SR-50 mechanically attached PVC roof cover

Sample No. 5-6:
-1/2 inch (13 mm) plywood
-Mechanically fastened 2-inch (51 mm) thick ENRGY 3 roof insulation
-Johns Manville 45 mil reinforced EPDM mechanically attached roof cover

Sample No. 7-8:
-1/2 inch (13 mm) plywood
-Mechanically fastened 2-inch (51 mm) thick ENRGY 3 roof insulation
-Carlisle FR mil reinforced EPDM mechanically attached roof cover

Sample No.	Slope	Maximum Flame Spread	Rating
1	3 in 12	71.5 inches	Class B
2	3 in 12	83 inches	Class B
3	2.5 in 12	65 inches	Class A
4	2.5 in 12	61 inches	Class A
5	0.5 in 12	55 inches	Class A
6	0.5 in 12	64 inches	Class A
7	1 in 12	44 inches	Class A
8	1 in 12	42.5 inches	Class A

Deck exposure, flying brands and significant lateral flame spread were not observed during the tests.

Per U.L. 1256, the ENRGY 3 roof deck insulation is allowed for use in Construction No. 120 and Construction No. 123.

LIMITATIONS OF APPROVAL

The ENRGY 3 roof insulation product is approved for direct application on a roof deck without the need of an interior thermal barrier as allowed under **s. IBC 2603.4.1.5** and **s. 2603.6.**

ENRGY 3 may be used in roof deck UL Constructions 120 and 123 in the UL Roofing Materials and Systems Directory.

The roof covering may still require testing in accordance with the ASTM E-108 standard to determine the roof covering classifications as required under **s. IBC 1505**.

This approval will be valid through December 31, 2007, unless manufacturing modifications are made to the product or a re-examination is deemed necessary by the department. The Wisconsin Building Product Evaluation number must be provided when plans that include this product are submitted for review.

DISCLAIMER

The department is in no way endorsing or advertising this product. This approval addresses only the specified applications for the product and does not waive any code requirement not specified in this document.

Revision Date:
Approval Date: January 21, 2003 By: _____

Lee E. Finley, Jr.
Product & Material Review
Integrated Services Bureau

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